



# Lake County Roundabouts

## Lake County

### The problem

Traditional “all-way stop” intersections can cause traffic backups, leading to commuting delays and increased emissions. This was the case at two rural intersections in Lake County, IL. Wadsworth Rd and Millburn Rd both end where they intersect with Hunt Club Rd in the Village of Old Mill Creek. In both cases, they were 3-way stops at T-intersections and motorists frequently experienced significant backups. Clearly, an upgrade was needed. Installing traffic signals could have been a way to help control traffic. However, this solution has drawbacks, including cost, safety, and the continued problem of the inefficiency of cars stopping and idling at red lights.

### The solution

In order to address these issues, roundabouts were proposed at both intersections. Roundabouts can be a more effective solution than a traffic signal alternative. Additionally roundabouts offer a significant improvement in safety.

According to the Insurance Institute for Highway Safety, roundabouts reduce overall crashes by 37% and crashes involving fatalities by 90%. The roundabout is effective because it reduces the potential conflict points between cars crossing the intersection. Compared with signalized intersections, it is also notable that all traffic must slow down to negotiate the roundabout, significantly reducing the potential for a high-speed collision. Thus, these roundabouts are expected to increase the overall safety of both intersections.

Roundabouts are generally a more cost-effective alternative, and with a longer estimated lifespan than a traffic signal. The construction cost of a roundabout is approximately 25% less than a signalized intersection, and its smaller overall footprint can mean additional savings through lower land acquisition costs. Pedestrian beacons on multiple lane crossings may eventually be required in compliance with proposed regulations under the Americans with Disabilities Act. Overall, roundabouts can reduce traffic congestion at these intersections at a reduced construction cost, while improving the safety.

### The process

The Lake County Division of Transportation started studying the potential of roundabouts in 2002. In addition to researching case studies around the nation, the Division’s road designers and engineers traveled to observe roundabouts in nearby Brown County, Wisconsin and Carmel, Indiana. Their visit to the Brown County roundabout was particularly informative, as they were able to observe how well they functioned during snow conditions.

Seeing their potential, the Division sought to test the effectiveness of roundabouts in Lake County. Not wanting to replace any existing signalized intersections, they identified and assessed different stop sign-controlled intersections that appeared to be good candidates for their implementation. They chose three locations: at the intersection of Everett Road and Riverwoods Road near Lincolnshire, and at two locations in the Village of Old Mill Creek, where Hunt Club Road intersects with Wadsworth Road and with Millburn Road.

In conjunction with reducing emissions CMAQ funding was sought and received for the project. As a Federal project coordination with IDOT was ongoing throughout the planning, design and construction phases.

### Overview

Installing traffic signals is a traditional way to help control traffic at intersections. However, this solution has drawbacks, including cost, safety, and the continued problem of the inefficiency of cars stopping and idling at a red lights. Roundabouts are an alternative that can reduce traffic congestion at these intersections at a reduced cost, while improving the safety of the intersections.

### CMAQ Resources

- [Roundabouts Strategy Paper](#)
- [GO TO 2040 Chapter on Regional Mobility](#)

### GO TO 2040

#### Recommendation: Regional Mobility -

*Prioritize maintenance and modernization projects when making investment decisions.*



New roundabout at intersection of Wadsworth and Hunt Club Road  
(Source: Lake County DOT)

### For more information

Richard D. McMorris, P.E.  
Lake County Division of Transportation  
phone: (847) 377-7400  
[rmcmorris@lakecountyil.gov](mailto:rmcmorris@lakecountyil.gov)

## Community considerations

The two intersections along Hunt Club Road consisted of roads that were the responsibility of the County, giving the Lake County Division of Transportation some latitude in the design and construction of the roundabouts at these locations. Recognizing the necessity of local support for the success of the project the Division approached the Village of Old Mill Creek, presented and explained their draft plans and sought input from the community. The aim was to take a “let’s do this together” approach, identify any unforeseen problems, and get “buy-in” from the community.

As roundabouts were a new concept to the area, the Village response was at first skeptical, however repeated discussions and sharing of information eventually led to acceptance. In addition to the concept, the Division and the community worked together to determine various landscaping aspects from what patterns to use on the concrete pavement in the islands and truck apron to what style and type of street lighting would be used. A local business agreed to accept responsibility for the maintenance of the landscaping associated with the roundabouts.

The Division worked to further prepare residents and motorists driving through the intersections for the arrival of the new roundabouts. Information about how to use roundabouts was posted [online](#), and [pamphlets](#) were handed out to municipalities, schools, local driving schools, and even directly to drivers during morning and afternoon peak commutes preceding the completion of the roundabouts.

Overall, the Lake County DOT looks forward to the success of these early roundabouts. They hope that lessons learned during their planning, design and construction can ease the way—shortening the project time—of the implementation of future roundabouts, especially as they become more familiar with local communities and with the Illinois Department of Transportation.

## Outcomes

Although the two roundabouts along Hunt Club Road were planned first, the one at the intersection of Everett Road and Riverwoods Road was built first opening in late 2010. The Hunt Club roundabouts were opened in 2011. The project cost a total of \$2.5 million for both roundabouts on Hunt Club Road and is expected to operate with minimal maintenance for years to come. It takes time to develop data, traffic counts, measured backups, accident figures, etc...so the analysis continues, but at this point it appears that despite initial apprehension among some drivers, adaptation to the new roundabouts has been smooth.

## Lessons learned

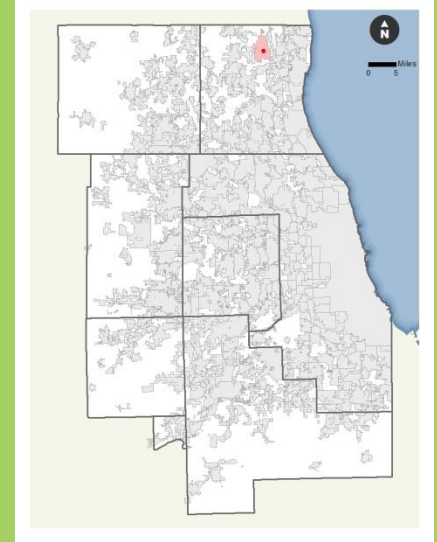
*You have to do a “closure.”* So far the benefits of closing down an intersection for the roundabout construction outweigh the benefits of keeping it open. Not only can closing down the intersection shorten the construction time, it also avoids problems that can arise from keeping it open, such as disconnected pavement, incorrect traffic patterns, and motorist frustration.

*The design needs to be right.* There is a need to anticipate problems, including providing utility accessibility (manholes, handholes etc...) while maintaining traffic flow. Even landscaping features need to be considered since those that are excessive (fountains that unintentionally spray cars) or simply too interesting (enticing some people to cross to the middle of the roundabout) can pose safety problems.

*Street lighting can be more expensive than signals.* The energy costs from required approach lighting can exceed the energy costs of a traffic signal. Additionally the maintenance costs of the street lights may be higher depending on the number of light poles – higher lights can mean less lights and poles.

Contact Lindsay Banks ([lbanks@cmap.illinois.gov](mailto:lbanks@cmap.illinois.gov)) to submit a case study.

## Map:



## Additional Resources

- [Lake County Division of Transportation: Roundabouts](#)
- [Federal Highway Administration: Intersection Safety: Roundabouts](#)
- [Designing Walkable Urban Thoroughfares: Modern Roundabouts](#)
- [Wikipedia: Roundabout](#)



*Before construction of roundabout at intersection of Millburn and Hunt Club Roads (Source: Lake County DOT)*



*After construction of roundabout at intersection of Millburn and Hunt Club Roads (Source: Lake County DOT)*